

ABSTRACT

5 New precursors and processes are disclosed for making fluorinated, low dielectric constant ϵ thin films that have higher dimensional stability and are more rigid than fluorinated poly (para-xylylenes). The fluorinated, low dielectric constant thin films can be prepared from reactions of an ethylenic-containing precursor with benzocyclobutane-, biphenyl- and/or dieneone-containing precursors. The fluorinated, low dielectric constant thin films are useful for fabrications of future $< 0.13 \mu\text{m}$ integrated circuits (ICs). Using fluorinated, low-dielectric constant thin films prepared according to this invention, the integrity of the dielectric, copper (Cu) and barrier metals, such as Ta, can be kept intact; therefore improving the reliability of the IC.

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